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## PATENT SPECIFICATION

Convention Date (Germany): Jan. 11, 1928.

303,865

Application Date (in United Kingdom): Jan. 11, 1929. No. 1043/29.

Complete not Accepted.



### COMPLETE SPECIFICATION.

#### Improvements in or relating to Pipe Holders.

I, PETER BRUNS, of Lensahn (Kreis Oldenburg) in the Province of Schleswig-Holstein, a citizen of the German Republic, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to pipe holders, which term is hereinafter employed to connote the hooks or clips commonly used for securing pipe lines to a wall or the like.

Pipe holders are known in which provision is made for preventing the water running down the pipe from getting into the masonry by way of the pipe holders; for this purpose it is known to provide the pipe clip with raised portions, so that only parts of such pipe clip bear against the pipe to be held thereby whilst others do not come into contact therewith, thus permitting an unimpeded flow of the water along the pipe.

The present invention relates to a pipe holder which overcomes the disadvantages hitherto still present in the pipe holders above referred to. The previous pipe holders all had the disadvantage that the inner surfaces themselves were just as smooth as the zinc or iron pipe, so that they had to be tightened up excessively in order to ensure the holding of the pipe in the correct position or alternatively, protuberances or grips had to be soldered on to the pipes.

According to the present invention, the inner surface of the pipe clip is first of all roughened up in such a way that a better grip on the pipe is thereby ensured. This applies both to clips which are applied to the pipe with a clearance and to those which lie directly against the pipe. In any case the parts of the clip which lie against the pipe and effect the actual holding must present a roughened surface which may be obtained in any desired manner e.g. by cutting with a saw file, rough galvanisation or the like.

It is convenient in these types of construction always to have the attachment part of the pipe clip raised to a sufficient distance from the pipe to be clamped therein, that any water running down the pipe cannot run into the masonry by way of the fixing pin.

For a good pipe holder it is however necessary not only that it shall slide as little as possible on the smooth pipe but also that it shall be capable of being easily and reliably applied to the pipe, above all, that the closing device shall permit of the clip being tightened up in order to hold it securely in position. Hitherto, owing to lack of roughening and also owing to lack of a suitable closing device, the tightening up of the pipe clips in two directions caused difficulties, firstly by reason of the fact that when the connecting parts were tightened up the pipe clips yielded and, secondly, because of the fact that, owing to this yielding, the shape of the pipe clips was so changed that sensitive pipes, such as zinc pipes (needing a lot of tightening up when the inner surface of the pipe clip is not roughened) were damaged. In the case of weak pipe clips the closing members serving to hold the various parts together frequently just bent apart, because the closing points were located generally at bent over portions which were disposed at right angles to the tensile stresses which arise when a pipe clip is tightened up. Therefore the pipe clips had always to be of much too strong a material.

According to the present invention the closing member proper may, for instance, conveniently be made in the form of a locking hook and slot but, in any case, in suchwise that the means of attachment lie in the direction of the tensile stresses which arise on screwing up, so that bending over out of plane and consequent loosening of the fastening never come into question.

In the accompanying drawings Fig. 1

shows, as an example of a closing member at one side, a constructional form of the invention. Reference *b* designates the slot at one side of the clip and *c* the corresponding locking hook on the other side of the clip.

In Fig. 2 can be seen at the point *a* in top plan view how the two connect with each other. This slot *b* is simply stamped out, while the tongue *c* must obviously be bent up out of the thickness of the material around the bridge piece *d* towards the inside or the outside, so as to be able to engage in the slit *b* and so act as a locking hook. Looked at from the side the part *c*, when the closing device is closed, lies as indicated by dotted lines in the left hand half of Figure 1. The position—seen from above—can be seen from Figure 2 and, on an enlarged scale, from Figure 2a. The fixing pin may conveniently be constructed in the manner shown in Figure 3 as a simple holdfast, while the distance *f* between the pipe parts proper and the driving head of the holdfast is preferably made so wide that even in the case of larger quantities of rain running down the pipe no drops of water will run over to the holdfast and thus travel to the wall.

In cases where it is only required to guide the pipe, rather than to hold it, pipe holders in the form of a simple hook will suffice, that is to say, without corresponding connecting members. Such are shown in Figs. 4 and 5. The novelty of this pipe holder consists, according to the present invention in the fact that it is also provided with roughened surfaces and with a raised arrangement of the fixing pin or holdfast.

The clearance around the pipe may, in the cases mentioned, be obtained either by means of swelling or depressions on the pipe clip itself or by separate parts interposed between the pipe and pipe clip.

Not only may the connecting point on the divided pipe clip at *a* (see Figure 2) have the constructional form shown, by way of example, in the specification and drawing but the opposed connecting parts, in which hitherto a screw connection has always been used may be made in similar form, so that the closing parts are arranged in the direction in which tension is set up. Such an arrangement is shown by way of example in Figs. 6 and 7. The manner of effecting closures resembles that of a beer bottle stopper, being in any case, a closing device in which the pivotal point is placed eccentrically. The closing device can be made most simply by first stamping out portions of the pipe clip in both parts thereof. In the right hand half of the pipe clip as shown in

Figure 7 are stamped two holes in which the ends *p* of the parts *g* can engage and in the left hand half in the middle of the pipe clip are stamped places in which the hooked part *o* of the lever closing device can engage. There can conveniently be provided, as in an adjustable perforated strap, various more or less adjacent small openings so that the lever closing device can be adjusted to different degrees of tightness according to the width of the pipe to be embraced. When the pipe clip is applied to the pipe, it is necessary in this case to proceed as follows: The hook *p* on the part *g* is first hooked into the corresponding holes in one part of the pipe clip; around the part *h* of the clip rotates the second lever of this lever closing device, consisting of the lever arm *m*, the turns *k* laid around the pivot point *h* of the limb *g* and the locking hook *o*. While the lever arm *m* is raised, that is to say, when it stands approximately perpendicular to the part *g* the locking hook *o* is first hooked into the corresponding slot (openings) in the other part of the pipe clip; pressure is then applied to the lever arm *m* whereupon the two hooks *p* and *o* are moved towards each other, so that the clip is therefore closed by lever pressure. This kind of closing device which acts in the direction of the tensile stress is perfectly new. It is obvious that this closing device can be constructed in various ways. The novelty thereof resides in the fact that for the first time, means of attachment are provided which act in the direction of the tensile stress on the device.

As two closing places are concerned in the pipe clip the present invention may even be used as shown in Figure 2, if merely one point is provided with means of attachment which act in the direction of tensile stress, it being possible to choose between the attachment described with reference to Figs. 2 and 2a or that of Figs. 6 and 7, on the one hand, and the screw connection, on the other hand, for the other side of the closing device. In other words the feature here described may be combined with each other in any desired manner without departing from the spirit of the invention, which is retained if only one of the features of the invention described as new be employed at any point of the closing holder.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. A pipe holder having a clip which is spaced from the pipe, characterised by the fact that the clip is suitably

roughened at those surfaces thereof which are designed to come into contact with the pipe.

2. A pipe holder according to claim 1, characterised by the fact that in the case of clip which is to bear only in part against the pipe the portions bearing against the pipe are roughened.

3. A pipe holder according to claim 1, characterised by the fact that the means of attachment (*b*, *c*, *d*) which form the closure are so arranged in the direction of the tensile stress which arises in the clip that bending up cannot take place, particularly, that this arrangement is applied at both points of connection of the divided clip.

4. A pipe holder according to claims 1 and 3, characterised by the fact that the means of attachment are constructed as a locking hook (*c*, *d*) and slot (*b*).

5. A pipe holder according to claim 1, characterised by the fact that the locking hook and slot are so connected to each other that an externally smooth surface is produced, that is to say, the locking

hook portion is turned towards the interior of the pipe, particularly in pipe holders, the clip of which are substantially spaced from the pipe.

6. A pipe holder according to claim 1, characterised by the fact that the means of attachment which form the closing device in the direction of the tensile stress which arises are constructed as adjustable lever closures.

7. A pipe holder according to claim 1, characterised by the fact that the driving pin or holdfast is located above the pipe clip at a distance from the pipe so that any overflow of water from the pipe to the holdfast is precluded.

8. A pipe holder according to claim 1, characterised by the fact that the pipe holder is constructed in the form of two independent pipe hooks with raised holding portions.

Dated this 11th day of January, 1929.

For the Applicant,

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Chartered Patent Agents.

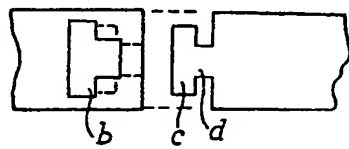


FIG. 1.

FIG. 2<sup>a</sup>

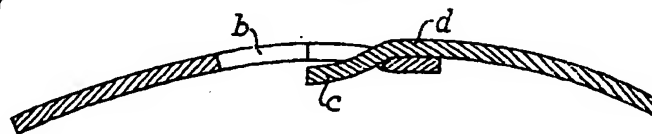


FIG. 2.

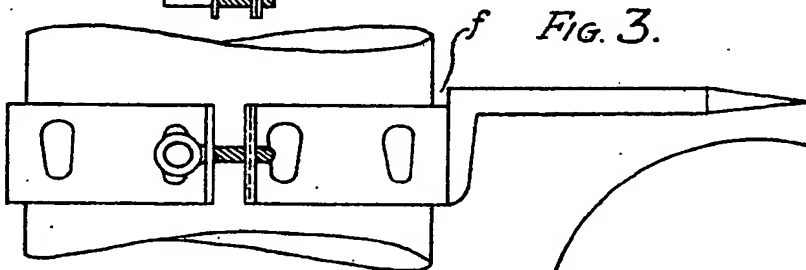
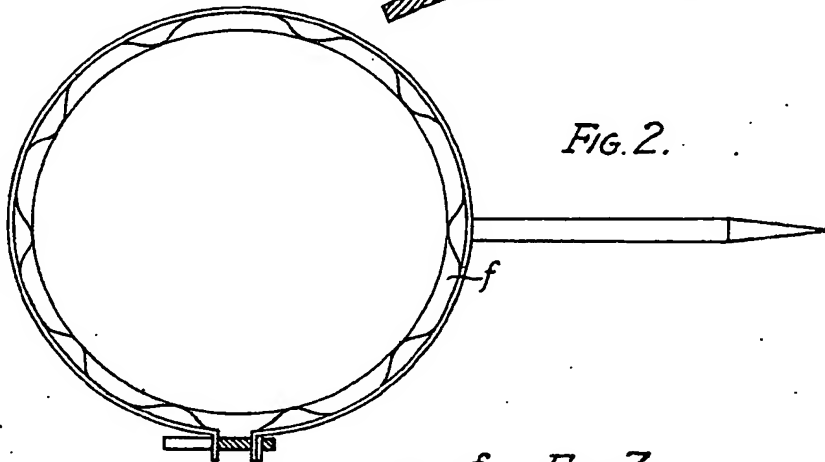


FIG. 3.

FIG. 4.

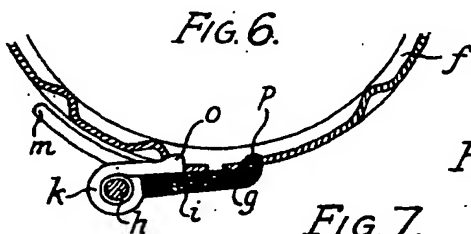
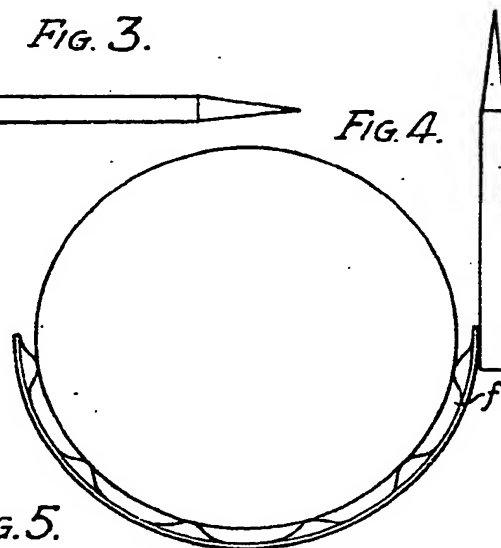


FIG. 6.

FIG. 5.

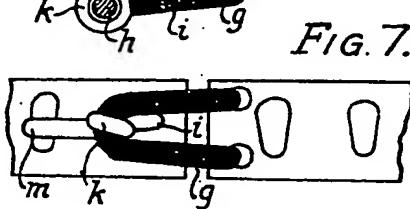


FIG. 7.

